PREPRESS PRIMER

UNDERSTANDING DESIGN, LAYOUT, AND PRINT PREPARATION

OGLESBY AUTOMATION GROUP

ABOUT THE OGLESBY AUTOMATION GROUP

Welcome to Oglesby Automation Group, your premier partner in elearning for the prepress and printing industry. At the heart of our mission lies a commitment to empowering professionals across the graphic arts sector with cutting-edge educational solutions and specialized training programs.

Founded on a passion for innovation and a deep understanding of the prepress processes, Oglesby Automation Group stands out as a leader in developing and delivering comprehensive learning experiences. Our expertise extends through the general prepress domain, with a special focus on harnessing the capabilities of the Esko product line to revolutionize workflows and enhance productivity.

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ABOUT THE COURSE

Welcome to "Prepress Primer: Understanding Design, Layout, and Print Preparation," an immersive e-learning course designed to lay a solid foundation for those aspiring to excel in the prepress industry. This comprehensive course is structured into eight succinct modules, each crafted to guide you through the critical aspects of prepress processes, from design inception to readying files for printing.

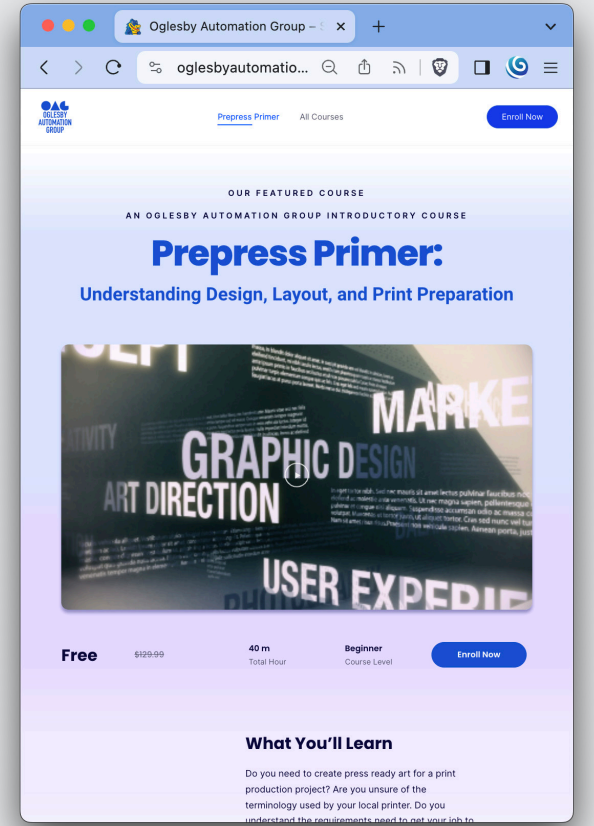
Our journey will begin with the basics of design principles, where you'll learn how to conceptualize and execute visually compelling layouts. As we progress, you'll delve deeper into the technical nuances of print preparation, including color management, file formatting, and proofing. Each module has been developed to build upon the last, ensuring a seamless and enriching learning experience.

ABOUT THE COURSE

To cater to diverse learning styles, this course offers a dynamic mix of educational materials. You'll engage with high-quality videos that provide visual explanations of complex concepts, supplemented by print materials for in-depth study. Interactive quizzes at the end of each module serve not only to test your knowledge but also to reinforce your understanding of key topics.

Whether you're new to the field or seeking to update your skills, this course is designed to equip you with the practical knowledge and insights needed to navigate the prepress industry confidently. By the end of this course, you'll have a thorough understanding of the entire prepress workflow, empowering you to make informed decisions and produce high-quality print-ready files.

Embark on this exciting learning adventure with us and transform your potential into expertise. Welcome to "Prepress Primer: Understanding Design, Layout, and Print Preparation." Let's get started!



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CHOOSING THE RIGHT SOFTWARE

The right tool for the right job

For print design, select software based on your content's needs: raster for detailed images, vector for scalable graphics, and layout tools for arranging elements. Ensure it supports CMYK for color accuracy and high-resolution output for clarity. Compatibility with standard print formats is also essential for a smooth printing process, ensuring your designs translate perfectly from screen to print.

Vector Images

Logos, Icons, Illustrations, Barcodes, Artwork, Technical Drawings, Typography, Maps, Infographics

Vector images are created using mathematical formulas to define shapes and lines, making them infinitely scalable without losing quality. This makes them perfect for applications where the size and clarity of the graphic are critical, such as logos and typography. Unlike raster images that can blur when enlarged, vectors maintain crisp edges at any size. They are editable in design software like Adobe Illustrator, allowing for precise adjustments of individual elements. This scalability and editability make vector graphics a preferred choice for professional design and branding.

Raster Images

Photographs, Digital Art, Textures for 3D models, Background Images, Video and Film, GUI Elements

Raster images are chosen for their ability to represent complex visuals with precision, making them indispensable for applications where detail and color depth are paramount. However, their scalability is limited compared to vector images, and they can become pixilated if enlarged beyond their original resolution.

Layout

Books, E-Pubs, Magazines, newspapers, Long Documents, Business Forms, Business Cards and Stationary, Menus, Flyers, Brochures, Posters, Banners

Layout tools empower designers to precisely arrange text, images, and graphics, essential for creating a range of documents from flyers to complex publications. They offer features to ensure consistency and visual appeal, such as grids and style sheets. With capabilities for high-resolution output and color management, these tools are crucial for producing professional-quality prints, making them a staple in publishing and advertising for delivering information in an engaging format.

Other Software Tools

Die Files, Preflight, Color Management, PDF Editing, Variable Data, Barcode Generators, Database Files, Imposition Software

For print production, beyond layout and design software, several additional tools and files are essential to ensure the final product meets the desired specifications and quality. These tools and files play critical roles in various stages of print production, from design and proofing to final printing and finishing, ensuring the print process is efficient and the end product meets all expectations.

SOFTWARE LIST

File Type	Software Recommendations
Raster Images	Adobe Photoshop, Affinity Photo, GIMP, Corel Painter
Vector Images	Adobe Illustrator, Affinity Designer, Corel Draw, Inkscape, Hybrid PackZ, Esko Artpro+, Canva
Layout	Adobe InDesign, Affinity Publisher, Quark Express, Scribus, Microsoft Publisher, Canva
Die Creation	Esko ArtiosCAD, CADtools, FlexiSIGN, AutoCAD

File Type	Software Recommendations
Variable Data	Fusion Pro, XMPie, Esko Dynamic VDP, PageFlex, Adobe InDesign with Data Merge or InData
Barcode Generation	Esko Dynamic Barcode, Barcode Studio. Zint Barcode Generator, Easy Barcode Creator, Aurora3D Barcode Generator
PDF Editors	Esko ArtPro+, Hybrid PackZ, Adobe Acrobat, Callas pdfToolbox, Enfocus Pitstop Pro, Markzware PDF2DTP
Imposition	Kodak Preps and Pandora, Hieldberg Signastation, Esko Phoenix, Ultimate Impostrip, Quite Imposing Plus

COLOR GAMUT AND INKS

4 Color process, Spot Colors and Extended Gamut inks

In printing, color gamut and inks are critical for producing accurate and vibrant prints. The color gamut describes the range of colors a printing process can achieve, influenced by the type of inks used. Different inks and printing technologies offer distinct color capabilities, affecting the final appearance of printed materials. Understanding these aspects is essential for choosing the right ink and printing method to match the desired outcome of a project.

4 COLOR PROCESS AND EXTENDED GAMUT

Four-color process printing, also known as CMYK printing, is a widely used method that combines cyan, magenta, yellow, and key (black) inks to create a wide spectrum of colors. This process relies on the subtractive color model, where colors are subtracted from white light to produce the desired hues on paper. By overlaying these four inks in varying densities and patterns, it's possible to simulate a large range of the color spectrum, making it a versatile and cost-effective solution for many printing projects. However, while CMYK printing can produce a broad array of colors, it has limitations in reproducing very bright or very saturated colors, leading to challenges in accurately matching some specific hues.

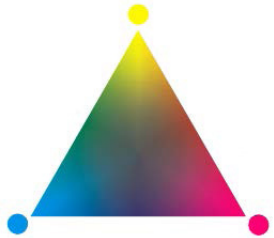
Extended gamut printing expands upon the traditional CMYK process by adding additional inks—such as orange, violet, and green—to the mix, allowing for a broader color gamut and more accurate color reproduction. This method enhances the printer's ability to produce colors that are difficult or impossible to achieve with standard CMYK inks alone, such as certain bright oranges, deep violets, and vibrant greens. By incorporating these additional inks, extended gamut printing can more closely match the colors seen on monitors or in real life, improving the overall quality and visual impact of printed materials. This approach is particularly beneficial for brands and designs that require precise color matching and vivid imagery, providing a richer and more detailed color experience.

COLOR GAMUTS

Getting the colors you need in the most cost effective way

4 Color process uses Cyan, Magenta, Yellow and Black inks, while Extended Gamut uses Cyan, Magenta, Yellow, Black, Orange, Violet and Green. Spot colors use individually mixed colors to achive a color match.

4 Color Process

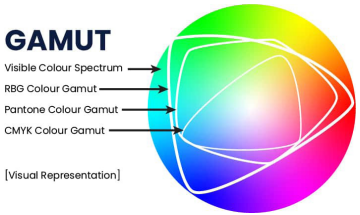


Cyan, Magenta, Yellow and Black

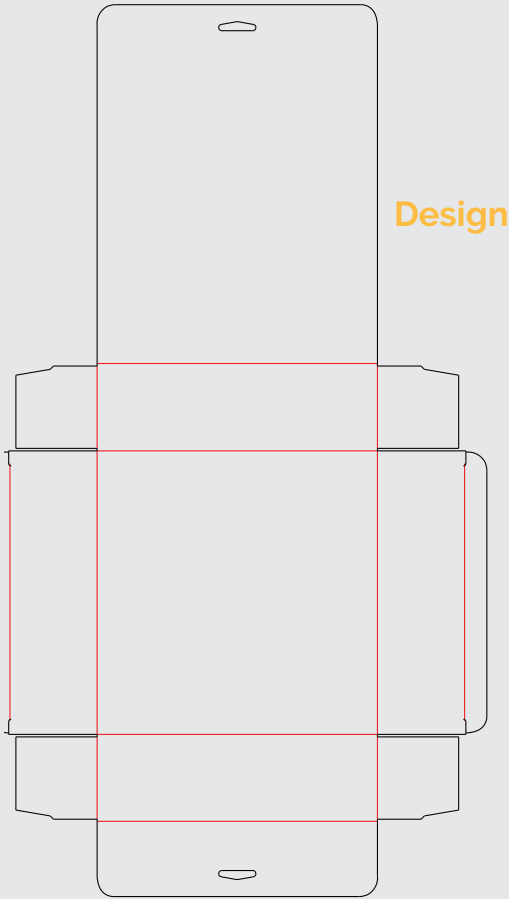
Extended Gamut

Cyan, Magenta, Yellow, Black, Orange, Violet, and Green

Spot Colors



Pantone Matching System (PMS) has over 2,100 different inks



DIES AND STRUCUTRES

Designing packaging strucutres and die shapes for Prepress

Dies and structure design play pivotal roles in creating functional and visually appealing packaging. Dies are specialized tools used to cut, shape, or form material into a specific layout or design, essential for creating the physical contours of a package. This process allows for precise cuts and creases in materials such as cardboard, paper, plastic, or metal, facilitating the folding and assembly of intricate packaging designs. Structure design, on the other hand, involves the meticulous planning of a package's physical form and functionality, taking into account factors like product protection, efficient use of space, and consumer convenience. Together, dies and structure design ensure that packaging not only attracts attention through its aesthetic appeal but also meets the practical requirements of storage, transportation, and display. This synergy between aesthetic appeal and functionality is crucial in the competitive retail environment, where packaging can significantly influence consumer perception and brand experience.

STRUCTURES

Die structures are designed using specialized structural design software, which allows engineers to create precise and complex patterns tailored to specific cutting needs. This software enables the detailed planning of die layouts, including the placement of cutting blades and creasing lines, ensuring optimal material usage and efficiency. Once the design is finalized, it is transformed into a steel rule die. This involves bending steel rules to match the design's contours and embedding them into a wooden or composite base, forming the cutting edges and structures necessary for the die cutting process. This method combines precision engineering with advanced technology to produce highly accurate and durable dies.

SOFTWARE UED TO CREATE STRUCUTURES:
"Creating structures with CAD software involves an iterative process where initial drafts are refined into detailed 3D models. This begins with a basic design that outlines the structure's dimensions and features. Through successive adjustments, designers can precisely tailor every aspect of the model, ensuring it meets specific requirements.

Expert technician meticulously adjusting a steel ruled die on a precision die cutting machine for flawless cutting performance.

Labels being cut inline on a Flexo press, showcasing the seamless integration of printing and die-cutting processes for efficient label production.

SOFTWARE UED TO CREATE DIELINES:
Using a vector design program to craft detailed dielines, outlining the essential cut and fold lines for packaging or products. This step is crucial for translating creative visions into practical, production-ready formats.

DIE CUTTING

In the realm of Flexographic printing, the integration of die-cutting capabilities directly within the press exemplifies a remarkable leap in manufacturing efficiency and product quality. The Flexo press, renowned for its ability to print on a wide variety of substrates—incorporates a crucial stage where dies are used inline, immediately after the printing phase. This process is designed to ensure that as the substrate unspools and passes through the press, it receives a multilayered application of fast-drying inks through rotating cylinders, each adding its own color to create complex, vibrant designs.

Following this printing sequence, the substrate encounters the die-cutting station. Here, a specifically crafted die, based on design specifications, is mounted onto a cylinder or a magnetic base, positioned to interact with the printed material, cutting it to the desired shape.

PROPERLY PREPARED FILES ARE LIKE A REFRIGERATOR,

Nearly 30% of files in prepress contain errors, requiring careful attention.

WHEN THEY WORK, NO ONE NOTICES, BUT WHEN THEY DON'T, IT REALLY STINKS.

Mark Oglesby

PREFLIGHTING

Preflighting prepress files is a critical step in ensuring the quality and accuracy of printed materials. Firstly, preflighting helps to identify any potential issues or errors in the files before they go to print. This includes checking for missing fonts, images with inadequate resolution, incorrect color profiles, or other technical issues that could lead to poor print quality or production delays. By catching these issues early in the prepress process, preflighting saves both time and resources by avoiding costly reprints or corrections later on.

Preflighting also helps to maintain consistency and adherence to printing standards. Whether it's ensuring proper bleed settings, verifying color accuracy, or confirming the use of appropriate file formats, preflighting helps to uphold the integrity of the design and ensures that the final printed product matches the intended vision. In industries where brand consistency and image quality are paramount, such as publishing, advertising, or packaging, preflighting plays a crucial role in delivering professional and polished results.

WHAT TO CHECK DURING PREFLIGHT

What	How
Bleed	Extend bleed artwork to bleed line.
Live Area	Check that important content is within safety margins.
Process Colors	Check that process colors are CMYK (not RGB).
Spot Colors	Check that spot colors are converted to CMYK or, if desired, carefully defined and applied as spot.
Images	Check that linked graphics are up to date.

What	How
Organize and Clean	Tidy by deleting unused elements, elements on the pasteboard, and empty boxes.
Die Lines	Set die lines are set to overprint.
Register Color	Verify no text is set to Register color.
Layers	Use layers to organize your document. Artlayer should only include artwork, die layer only includes dieline.
Image Quaility	All images should be in the process color space and at least 300 dpi at the effective resultion.

WHAT TO CHECK DURING PREFLIGHT

What	How
Overset Text	Review your complete document for oversey text.
Number of Seperations	Check your color separations before submitting files to be sure that the colors indicated are what you want printed.
Spelling	Proof and check spelling for all documents
FPO Check	Review For Position Only images (FPO) are replaced
Collection of files	InDesign: Go to File > Package Quark XPress: Go to File > Collect for Output

What	How
Variable Data	Fusion Pro, XMPie, Esko Dynamic VDP, PageFlex, Adobe InDesign with Data Merge or InData
Barcode Generation	Esko Dynamic Barcode, Barcode Studio. Zint Barcode Generator, Easy Barcode Creator, Aurora3D Barcode Generator
PDF Editors	Esko ArtPro+, Hybrid PackZ, Adobe Acrobat, Callas pdfToolbox, Enfocus Pitstop Pro, Markzware PDF2DTP
Impostion	Kodak Preps and Pandora, Hieldberg Signastation, Esko Phoenix, Ultimate Impostrip, Quite Imposing Plus

WHY BLEED AND LIVE AREA ARE CRUCIAL

In the world of print production, preparing files correctly for a printing press is paramount to achieving professional and visually stunning results. Meticulous file preparation ensures that your designs translate flawlessly from the digital realm to the printed page. Improperly formatted files can lead to a host of issues, including layout distortion, unprofessional results, color inconsistencies, blurry images, and missing design elements.

By understanding the nuances of file preparation, you guarantee that your printed materials will exude the quality and impact you envisioned, leaving a lasting impression on your audience. In this section of our guide, we will focus on bleed and live area.

Tolerance for Error: No matter how sophisticated printing presses and cutting equipment may be, there is always a margin for subtle shifts and misalignments during production. Paper can shift, cutting blades can deviate ever so slightly. Bleed acts as a safety net. It prevents unsightly white borders from appearing if the cut is a fraction of a millimeter off its intended mark.

Visual Seamlessness: Bleed is particularly crucial for designs where backgrounds or images extend to the edge of the page. Without bleed, any misalignment during cutting would disrupt the design's intended impact. Bleed guarantees that colors and visuals flow smoothly off the edge, creating a polished, edge-to-edge effect.

Production Considerations: Bleed anticipates the realities of the printing process. Paper stacks may shift slightly in transit or during the cutting stage. By having a bit of extra image beyond the trim, bleed absorbs these potential variations. It prevents the eye-catching, borderless design you intended from being accidentally compromised.

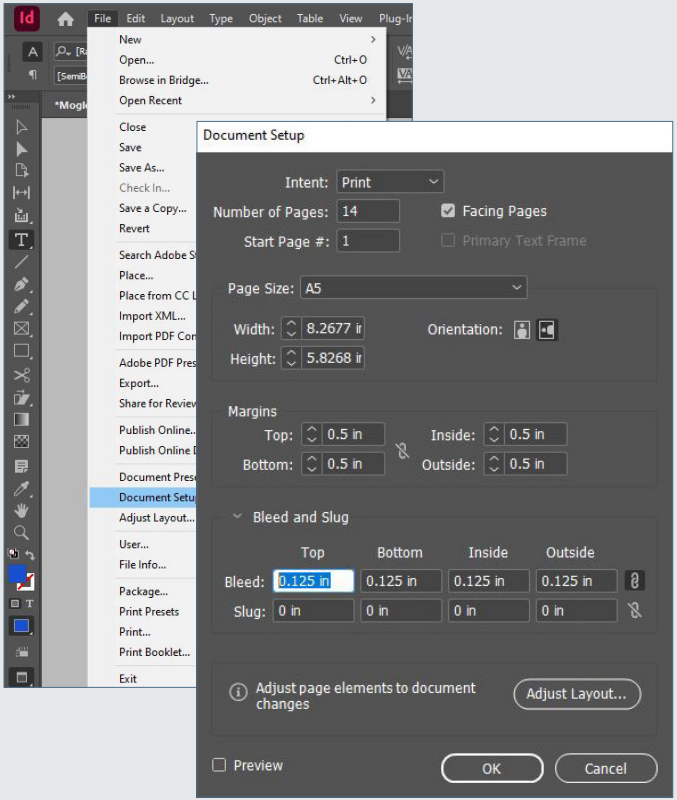
Professional Finish: Ultimately, bleed is a hallmark of professional print design. It demonstrates forethought and attention to detail. Designs with bleed exude a sense of completeness and refinement that disguishes them from amateur work where the content abruptly stops short of the edge.

Specifications

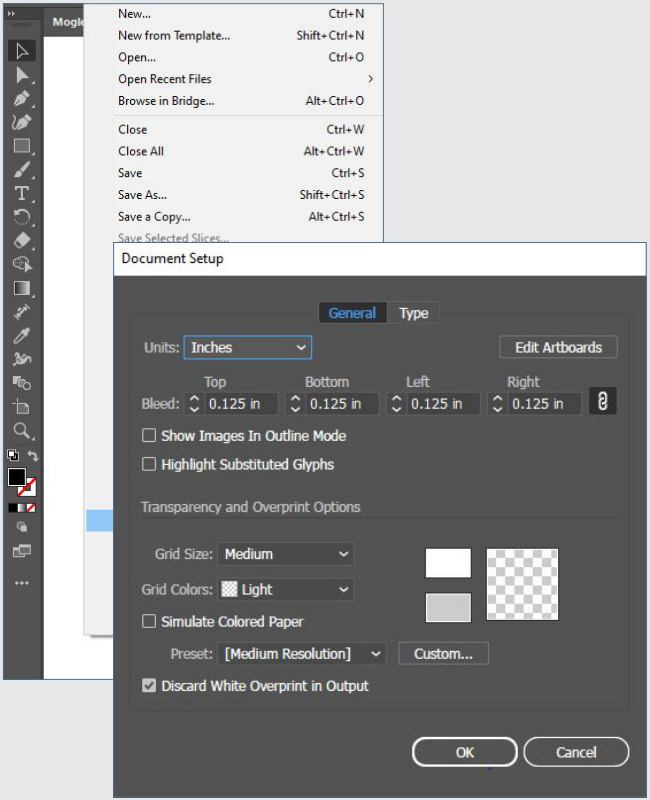
Start by obtaining the correct specifications for bleed and live area from your printer. Standard bleed is often 1/8 of an inch (0.125"), but it's always best to confirm.

Design Software Setup

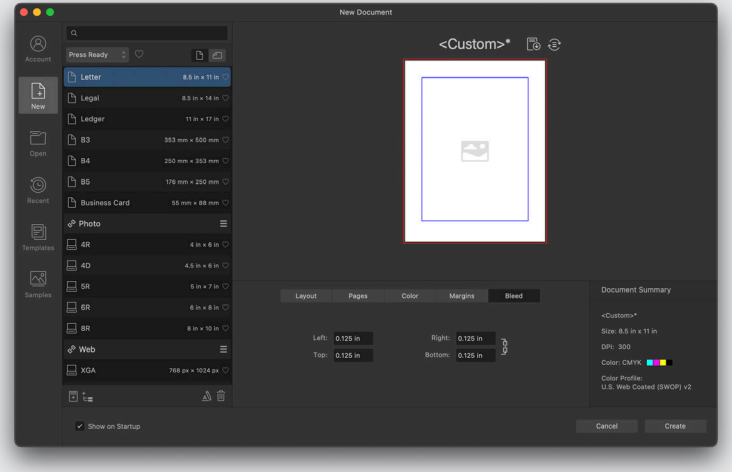
In your design software (e.g., Adobe Illustrator, InDesign, Photoshop), set up your document with the provided bleed dimensions. Visual guides will typically appear to indicate the trim line, bleed line, and live area.



Page setup for Adobe InDesign



Page setup for Adobe Illustrator



Page setup for Affintity Designer and Publisher

Extend Elements

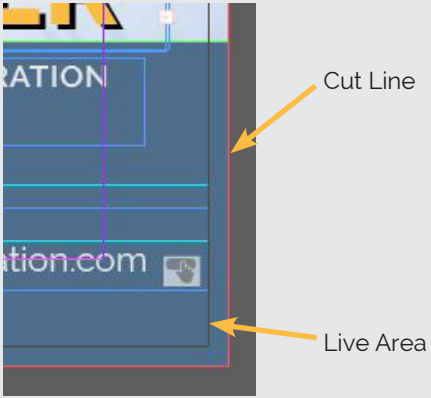
Start by obtaining the correct specifications for bleed and live area from your printer. Standard bleed is often 1/8 of an inch (0.125"), but it's always best to confirm.

Start by obtaining the correct specifications for bleed and live area from your printer. Standard bleed is often 1/8 of an inch (0.125"), but it's always best to confirm.

Process	Bleed	Live Area
Offset	.125" each side	.125" each side
Flexographic	.0625" each side	.25" each side
Screen	.25" each side	.25" each side
Digital	.125" each side	.125" each side

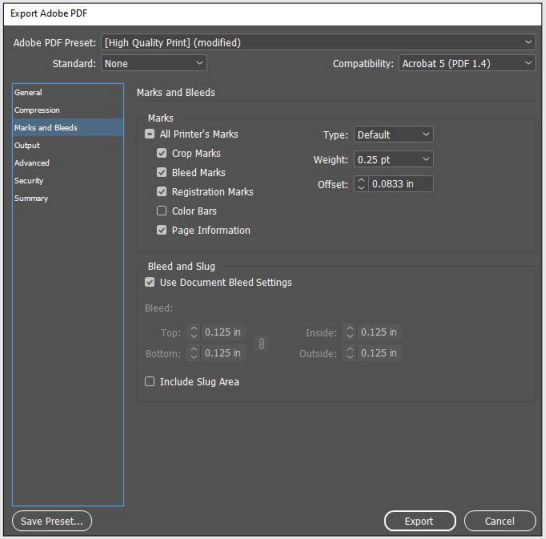
Keep Important Content Within the Live Area

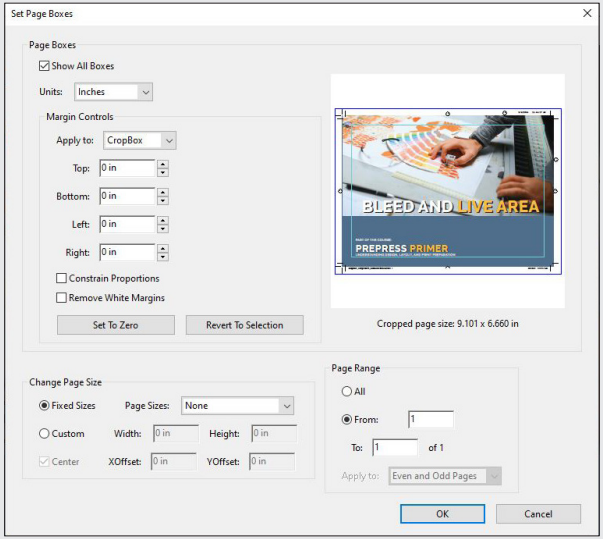
Ensure all critical text, logos, or design elements that must be visible reside comfortably within the live area boundaries.



OUTPUT SETTINGS

When exporting your final artwork as a PDF, make sure it includes the bleed marks (and crop marks if requested by your printer). Viewing a final output PDF, you may not see the bleed. Do view the full art with bleed, the crop box mus be set to be equal to the media box.





ADDITONAL TIPS

Communication: Stay in clear communication with your printer throughout the process. They can provide specific requirements and address any questions you may have.

Early Planning: Incorporate bleed and live area considerations from the very start of your design process. This will prevent headaches and reworking later on.

Overcommunicate with Your Printer: Be absolutely clear about how much bleed they require, and whether they have specific preferences for setting up your file (mark placement, etc.). This proactive communication minimizes the potential for errors or delays.

Start with a Template: Many printers provide premade templates for various projects, saving you the work of setting up the document dimensions and guides manually.

Fold Awareness: For folded pieces like brochures, be mindful of how the folds interact with your bleed area. Ensure important visuals don't become obscured and that the folds align cleanly without unintended white gaps.

Spine Bleed: In books or multi-page booklets, you'll typically need an additional bleed allowance on the spine side, depending on the thickness of the publication. Your printer will provide the specific measurement.

Making Bleed: Increase the size of images that lack bleed by a small amount. Often a 2% increase in size will allow enough extra image for the bleed without creating a low resolution issue for the image.

Double-Check File Settings: Before exporting your final PDF, carefully review the document settings and ensure that bleed settings are included as required by your printer.

Proof Carefully: When approving proofs, pay close attention to the edges where your design bleeds off. Check for any jarring misalignments or unexpected cropping of background elements. If using a physical proof, simulate the trim with an accurate ruler and cutting tool for best results.

Think Beyond the Page: When designing for packaging or dimensional objects, the concept of bleed still applies. Extend design elements slightly past any potential fold or cut lines for a seamless finished look.

UNDERSTANDING PRINTER MARKS

Decoding the Secret Language of Press Sheets

Printer marks are a series of symbols and elements strategically placed outside the printable area of a press sheet. These marks serve various purposes for the printer. Crop marks (or trim marks) indicate where the sheet should be cut for the final product. Registration marks ensure accurate color alignment in multi-color printing. Color bars allow the press operator to monitor ink densities and color consistency. Other marks might include the file name, page number, date, and additional information for identification and quality control throughout the printing process.

Trim Marks

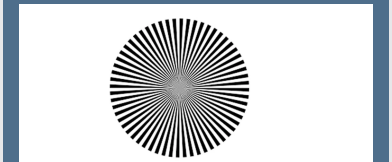
The indicator of where your work should be cut or trimmed to its intended size. In printing,

Registration Marks

Registration marks look like little targets with a crosshair. They're largely used for alignment purposes, particularly when your print has more than one process applied.

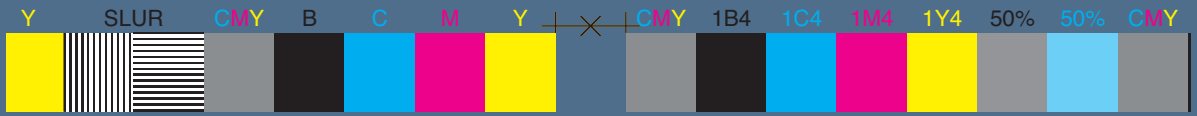
Star Target

The star target appears next to the colour bar helping to detect any inconsistencies in the ink spread across your piece of print.



Color Bars

Are small squares added of colour representing the CMYK inks. To adjust ink densities on the printing press, one colour bar is used and marked for each printing ink in the process to deliver the final piece. Colour bars will allow the evaluation of the quality of the printed material relative ink density, registration and dot again.



Informaiton Mark

Sometimes referred to as "Page Information" or "Production Notes". It's another type of space in production that will be trimmed off during the printing process.

Slug Area

Slug area is EVERYTHING outside the finished edge – this includes the defined bleed area and beyond. Crop marks and bleed area both live within the Slug area.

WIDE WORLD OF PRINTING PROCESSES

Screen Prining

Screen printing is a technique where a mesh stencil is used to transfer ink onto a substrate. The ink is pushed through the open areas of the stencil with a squeegee, creating a design on the surface below.

Market Segments:
Apparel
Promotional Products
Industrial
Textiles
Specialty/Artistic

Digital Sign and Display

Sign and display printing encompasses the creation of visual marketing materials for both indoor and outdoor use. This includes everything from storefront signs and window graphics to trade show banners and point-of-purchase displays.

Market Segments:
Retail
Event and Trade Shows
Hospitality

Digital Label

Digital label printing uses advanced inkjet or laser technologies to print directly onto label materials. This process offers flexibility for short-run labels, customization with variable data, and eliminates the need for printing plates, making it a cost-effective option for smaller quantities.

Market Segments:
Food and Beverage
Promotional
Indudtrial and Chemical

Offset Lithography

Offset lithography is a dominant printing technique renowned for its high image quality, sharp detail, and color consistency, making it ideal for larger print volumes. The process relies on the principle that water and oil repel each other. Image areas on a printing plate attract ink, while non-image areas attract a water-based solution. This inked image is first transferred (or offset) from the plate to a rubber blanket cylinder and then finally onto the printing surface, which could be paper, cardboard, or other substrates. Offset lithography is the go-to method for projects like magazines, newspapers, brochures, packaging, and other commercial printing needs where cost-effectiveness over large quantities is key.

Market Segments:
Commercial Prining
Newspapers and Magazines
Packaging
Books
Point of Sale Displays

Flexography

Flexography, often shortened to "flexo," is a type of rotary relief printing that uses flexible printing plates made of rubber or photo-polymer materials. The raised areas on the plate carry the ink and transfer the image directly onto a wide variety of substrates, including plastics, metallic films, cellophane, and paper. Known for its high print speeds, adaptability to different materials, and ability to handle long print runs, flexography is widely used in industries like packaging, labels, newspapers, and even disposable goods like cups and napkins. Modern flexo presses can incorporate multiple print stations, allowing for complex color combinations and inline finishing processes.

Market Segments:
Packaging
Labels
Disposable Goods
Specilty Printing

OAG COURSES OFFERINGS

Our Esko Prepress Experts get you started, quick

Dont let your investment sit under utilized. Put it to work with expert training with instructors with years of experience with the products as well as industry know hand.

$700

Installing Esko Automation Engine

This 1 day course will cover the installation Esko Automaiton Engine and all the asscoaited applicaitons and services needed both on the server and client machines.

$1950

Basic Esko Automation Engine Workflows

This 3 day course will take you from basic workflow creation to advanced solutions, automating your companies print production processes. Information regardining the Connected module finishes out the course.

$700

Basic Automation Engine for Admins

A 1 day training for administrators manageming Automation Egnine. Best practices and mangement tips highlight this fast pace course with ample time for Q&A for your company.

OAG COURSES OFFERINGS

$1350

Installing Esko WebCenter

This 2 day course will cover the installation of Esko WebCenter Application Server and all WebCenter Web Server. Basic setup of the system will finish out this course, leaving the customer with a working local installation.

$2250

Basic Esko Web Center for Admins

This 4 day course covers the basic training for both Admins and Super Users of Esko WebCenter. Creating soltuons and workflows will be the focus of this fast pace course.

$250

Regular Expressions in Automation Engine

A quick 2 hour tour of all the of the basics of using Regular Expressions and how and where they work in Esko Automation Engine workflows

OGLESBY AUTOMATION GROUP

Learning often happens in classrooms but it doesn't have to.

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